

CLAIMS

What is claimed is:

- 1 1. A photosensor assembly, comprising:
2 a first array of photosensor elements, each photosensor element in the
3 first array having a first size;
4 a second array of photosensor elements, each photosensor element in
5 the second array having a second size, wherein the first size and second size are
6 substantially different;
7 a charge shift register; and
8 both the first and second arrays of photosensor elements adapted to
9 transfer charges to the charge shift register.
- 1 2. The photosensor assembly of claim 1, further comprising:
2 a third array of photosensor elements;
3 an overflow drain; and
4 the third array, and one of the first and second arrays, adapted to
5 transfer overflow charges to the overflow drain.
- 1 3. The photosensor assembly of claim 1, further comprising:
2 at least one of the arrays of photosensor elements is arranged as first
3 and second line arrays, on each side of a centerline, in a staggered pattern, such that a
4 first photosensor in the first line array is offset in the direction of the centerline
5 relative to a first photosensor in the second line array.

1 4. The photosensor assembly of claim 1, further comprising:
 2 an overflow drain; at least one of the arrays of photosensor elements
 3 is arranged as first and second line arrays, on each side of a centerline, in a
 4 staggered pattern, such that a first photosensor in the first line array is offset
 5 in the direction of the centerline relative to a first photosensor in the second
 6 line array, and the first and second line arrays share the overflow drain.

1 5. The photosensor assembly of claim 1, further comprising:
 2 first and second amplifiers; wherein the charge shift register shifts
 3 charges from the first array of photosensor elements to the first amplifier or
 4 the charge shift register shifts charges from the second array of photosensor
 5 elements to the second amplifier.

1 6. The photosensor assembly of claim 5, wherein the first and second
 2 amplifiers have substantially different gains.

1 7. A photosensor assembly, comprising:
 2 a first array of photosensor elements, each photosensor element in the
 3 first array having a first size;
 4 a second array of photosensor elements, each photosensor element in
 5 the second array having a second size, wherein the first size and second size are
 6 different;
 7 an overflow drain; and
 8 the first and second arrays of photosensor elements adapted to transfer
 9 overflow charges to the overflow drain.

1 8. A photosensor assembly, comprising:
2 six arrays of photosensors; and fewer than six charge shift registers
3 receiving charges from the arrays of photosensors.

1 9. The photosensor assembly of claim 8, wherein there are three charge shift
2 registers.

1 10. A photosensor assembly, comprising:
2 three arrays of photosensors;
3 three staggered line arrays of photosensors; and
4 fewer than nine charge shift registers receiving charges from the
5 arrays of photosensors and the staggered line arrays of photosensors.

1 11. The photosensor assembly of claim 10, further comprising: seven charge shift
2 registers receiving charges from the arrays of photosensors and the staggered line
3 arrays of photosensors.

1 12. The photosensor assembly of claim 10, further comprising: six charge shift
2 registers receiving charges from the arrays of photosensors and the staggered line
3 arrays of photosensors.

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1 13. A photosensor assembly, comprising:
2 a first array of photosensors, arranged as first and second line arrays,
3 on each side of a centerline, in a staggered pattern, such that a first photosensor in
4 the first line array is offset in the direction of the centerline relative to a first
5 photosensor in the second line array;
6 a second array of photosensors, arranged as third and fourth line
7 arrays, on each side of a second centerline, in a staggered pattern, such that a first
8 photosensor in the third line array is offset in the direction of the second centerline
9 relative to a first photosensor in the fourth line array; and
10 the charge shift register receiving charges from the second line array
11 and from the third line array.

1 14. A method of scanning, comprising:
2 exposing a first array of photosensors to light;
3 exposing a second array of photosensors to light;
4 transferring charges from the first array of photosensors, to a charge
5 shift register, for a first optical sampling rate; and
6 transferring charges from the second array of photosensors, to the
7 charge shift register, for a second optical sampling rate.